

REMARKS

Claims 1, 20 and 27 have been amended, and claim 19 was previously cancelled; therefore claims 1-18 and 20-34 remain pending in this application. In view of the above amendments and the following remarks, it is respectfully submitted that these claims are allowable.

Claims 1-18 and 20-26 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Gu et al. (WO-00/79319 A1); claims 27-28, 30-31 and 33-34 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Miura et al. (EP-01116965 A1); and claims 29 and 32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Gu et al. in view of Aitken et al. (U.S. No. 6,573,026 B1). The Examiner's grounds for rejection are hereinafter traversed, and reconsideration is respectfully requested, particularly in view of the clarifying amendments to the claims.

Gu et al., Miura et al. and similar patents describing, claiming damage in an optical fiber are assuming several things, understood in the art of fiber optics, particularly when describing periodic changes in refractive index to achieve gratings, whether they be short or long gratings. Two of note for our discussion are that the buffer/jacket, i.e. the plastic materials protecting the glass surface of the fiber are removed over the sections where the changes are to be created, and secondly they assume presence of photoreactive/photosensitive material within the areas of glass to be treated. Without these two assumptions, most of the discussion of patterns or scattering sites are typically not possible, as known by those skilled in the art at the time of this invention's filing in 2002.

We have modified the independent claims to clearly distinguish the fact that the present invention works without these limitations/assumptions. Which is why the present invention was truly unique and non-obvious when filed. I can speak personally on this as having personally invented a new class of optical fiber in the 1980s and having studied the art of fiber optics for 30 years and the art of photosensitive materials for over 40

years. Silica is a uniquely stable material and creating microdamage in it is clearly non-trivial, unless ions and atoms significantly different from Si and O are in the glass, as e.g. soda glass or the glass composition noted in Miura et al. (See note in paragraph 00050 of Miura et al. that the material is only 72% silica, and the remainder is a mix of oxides including metal copper (Cu_2O), tin (SnO), sodium carbonate and boric oxide. In paragraph 0051, Miura et al. explain that this is a very soft glass which is formed by melting at about $650^{\circ}C$, whereas the waveguides of the present invention are particularly suited for manufacture from 'pure silica' that does not soften unless heated higher than about $1500^{\circ}C$, and does not melt unless heated to about $2100^{\circ}C$. High power laser effects in such low silica glass as in Miura et al. is significantly different than the effects in primarily silica glass because of the temperature characteristics of each.)

This was pointed out in earlier exchanges, but the contrast in scope of the present invention is made clearer by the amended claims 1, 20, and 27. Simply put the present device/method does employ the same material which is suitable for the Gu et al. and Miura et al. patents. The present invention uses ultra-short pulses of laser energy capable of accurately creating non-periodic scattering centers without requiring the removal of plastic buffers or jackets, as is the case in the prior art references. Gu et al. in their reliance on masks and such really are concerned with periodic scattering structures or highly patterned scattering sites providing predetermined scattering output varying regularly down a treated section away from the fiber's light source when transmitting energy. (see e.g. Gu at page 13, lines 7ff).

It is respectfully submitted that Aitken et al. does not materially add to the teachings of Gu et al. with respect to the presently claimed invention.

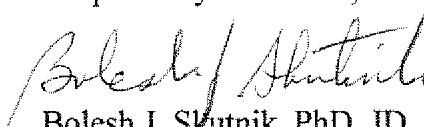
Accordingly, it is respectfully submitted that claims 1-18 and 20-34 are allowable. All issues raised by the Examiner having been addressed, an early action to that effect is earnestly solicited. Should there be any questions that a phone call could help advance allowance of the present invention, the attorney below welcomes such before formal action is passed on the continued prosecution of this application

A Petition for a Three Month Extension of Time along with the associated fees are filed herewith along with a Request for Continued Examination with its associated fees. No additional fee is believed to be required. In the event the Commissioner of Patents and Trademarks deems additional fees to be due in connection with this application, Applicant's attorney hereby authorizes that such fee be charged to Deposit Account No. **50-1693**.

Respectfully submitted,

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CeramOptec Industries, Inc
515 Shaker Road
East Longmeadow, MA 01028
Phone: (413) 525-8222


Bolesh J. Skutnik, PhD, JD
Reg. No. 36,347
Attorney for Applications

Fax: (413) 525-0611